

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119456

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A COMPLEX MIXT. OF ODORIFEROUS SUBSTANCES OF HYDROGENATED FATS WAS SEPD. FROM FATS BY MOL. DISTN. IN LAB. EQUIPMENT AND ANALYZED BY SPECTROPHOTOMETRY WITHOUT SEPN. OF THE MIXTS. INTO FRACTIONS. THIS SIMPLIFIED METHOD GAVE SATISFACTORY RESULTS. PRODUCTION DEODORIZING OF HYDROGENATED SUNFLOWER OIL MADE BY A BATCH OR CONTINUOUS METHOD SHOWED THAT IN CONTINUOUS PROCESSING, UNSATO. CARBONYLS WERE REMOVED MORE EFFECTIVELY THAN IN BATCH PROCESSING. THE IR AND UV SPECTRA OF THE PRODUCTS INVESTIGATED SHOW THAT CONTINUOUS DEODORIZING REMOVES UNSATO. CARBONYL COMPS. MORE COMPLETELY. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 66.035.3/.5:678.742.2

P'YANKOV, G. N., KABARCHI, A. M., GOLODNYI, YU. F., BRASHKIN, M. A., LOPATIN, I. P., YARMIKO, YE. G., and BORDIKOVA, A. N., Institute of Physical Chemistry, Acad. Sc. UkrSSR

"Experimental Line for the Production of Radiation Modified Polyethylene Tubes UR-0.4P"

Kiev, Khimicheskaya Tekhnologiya, No 2 (62), Mar-Apr 72, pp 50-52

Abstract: An experimental line has been constructed for the production of radiation modified polyethylene tubes. The novelty of this process is in the irradiation method. The tubes pass repeatedly through the irradiation zone in a spiral pattern, with alternating directions of the rotation, so that exposure is uniform to the radioactive source, and damage due to the radiation heat is minimal. As an example, a tube 6 mm in diameter, wall thickness up to 0.5 mm, moving at a velocity of 2m/min, after 6 passages through the chamber picks up a dose of 45 Mrads.

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USSR

UDC 621.385.032.269

ZINCHENKO, M.S., LOPATIN, I.V. [Both names transliterated from Ukrainian]

"Experimental Investigation Of The Properties Of Beams Of High-Perveance Three-Electrode Electron Guns"

Ukr.fiz.zh. (Ukrainian Journal Of Physics), 1971, 16, No 6, pp 999-1004 (from RZh--Elektronika i yeye primeneniye, No 11, Nov 1971, Abstract No 11A26)

Translation: The results are presented of an experimental investigation of the properties of beams which are formed by 3-electrode guns with longitudinal compression. Measurements were made in a wide interval of changes of the gun parameters: potential, 100--1000 V; beam current, 2-50 ma; perveance, 2-130 microamp/v^{3/2}; ratio of potentials of the first and second diaphragms, 1-18. As seen from the profiles of the electron beams presented in the work and the radial distribution of the current density at various cross sections of the beam, guns with longitudinal compression make it possible to control the location of the crossover, the form of the beam profile, the form of the curve of the radial distribution of the current density and the magnitude of the coefficient of beam sinusity during Brillouin focusing. It is shown that with control of the parameters mentioned, sufficient laminosity of the beam remains.

1/1

MATHEMATICS

Differential & Integral Equations

USSR

UDC 517.913

MYTROPOL'S'KYY, YU. O., Academician of the Academy of Sciences Ukrainian SSR,
and IOPATIN, O. K., Institute of Mathematics, Academy of Sciences Ukrainian
SSR

"On the Decomposition of Nonlinear Systems"

Kiev, Dopovidi Akademii Nauk Ukrain's'koi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 12, Dec 72, pp 1078-1082

Abstract: The article considers the question of the reduction of a system of nonlinear, ordinary differential equations of the form

[illegible]

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MYTROPOL'S'KYY, YU. O., and LOPATIN, O. K., Dopovidi Akademii Nauk Ukrain-
s'koi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 12, Dec
72, pp 1078-1082

where $\alpha_{ij}(a_1, \dots, a_m, t), \dots, \alpha_{nj}(a_1, \dots, a_m, t)$ are continuous functions
of the parameters a_1, \dots, a_m and time t in a certain region, $\varphi_{j1}, \dots, \varphi_{jn_1}$
($j=1, \dots, n_1$) are holomorphic functions in a certain region Ψ . The problem
is to find the conditions which make it possible, depending on the form of
system (1), to establish when there are transformations of the variables
which turn to Ψ ; depend only on the variables x_1, \dots, x_n , and which reduce
(1) to a certain equivalent system which is of the same order but decomposes
into a series of independent subsystems of new variables. The article es-
sentially uses the classic results of Lie theory and the theory of linear
partial differential equations of first order.

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- 1 -

Acc. Nr.

LOPATIN V.A.

AAO108702

Abstracting Service:

Ref. Code:

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 3/10

228073

TURNING ANGLE OF SHAFT can be corrected by rhythmic and pulse forming network with following set-up. In the transistorised system shown here, the negative rhythmic pulses are applied to the base of the transistor (1). Transistors (3' and (4) are shut when correcting pulse is absent. The temperature stabilisation of the transistor (4) is achieved by the resistor (5) and the stabiliser (8).

When the transistor (2) is excited by the rhythmic pulses, the current is passing through the stabiliser (7), these pulses are formed in the transformer (9) and passed to the balance line (11).

When a negative pulse arrives to the base (3), it opens transistor (4), which shunts stabiliser (7). As a result in the transformer (9) is formed a pulse of a larger amplitude; this depends on the voltage of the stabiliser (7).

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To minimise distortion of the pulses there is dc. magnetisation of the core (9) which is regulated by the resistor (6).

Similar transformer (10) is used at the output of the line (11).

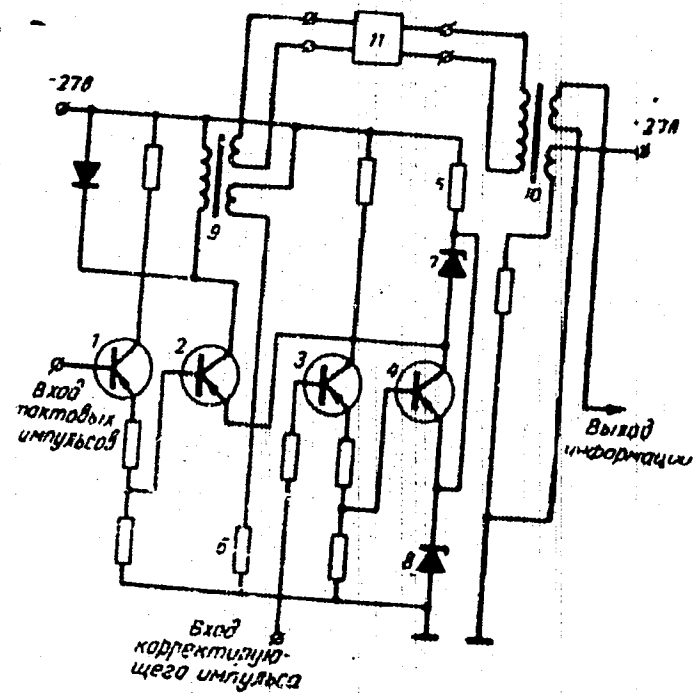
13.3.67. as 1139229/26-24, ANISHCHENKO, L.M. et al.
(2.7.69) Bul. 31/8.10.68. Class 21a, Int. Cl. H 03k.

AUTHORS: Anishchenko, L. M.; Yevsyukov, V. V.; Lopatin, V. A.;
Rabinovich, G. L.; Sukhenko, P. V.

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AA0108702



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USSR

UDC: 621.396.963

LOPATIN, V. A., SOL'NIKOV, I. M., RABINOVICH, G. L., YAKUSHEV, Zh. F.

"A Device for Introducing Graphic Information Into Analog Azimuth-Range Indicators"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 14, 1970, Author's Certificate No 268514, filed 3 Apr 69, pp 43-44

Abstract: This author's certificate introduces a device for feeding graphic information into analog azimuth-range indicators. The unit contains an azimuth mark pickup and an interrogation pulse shaper which consists of a shaper control unit, shapers, a register for control of electronic keys, electronic keys and an interrogation pulse decoder. Also included in the device are an amplifier module, a code-to-time converter, a unit which shapes graphic information pulses, and a calibrated range mark pickup. As a distinguishing feature of the patent, the precision of plotting an electronic route map is improved and operation is made more convenient by adding a range code memory unit whose inputs are connected through the interrogation pulse shaper to the azimuth mark pickup, while the outputs are connected through the amplifier module to the record inputs of the code-to-time converter. Connected to the counter input of this converter is the output of the calibrated range mark pickup.

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USSR

UDC: 621.317.725

GUTNIKOV, V. S., Candidate of Technical Sciences, and LOPATIN,
V. V., Engineer

"Integrated Circuit Voltage-to-Frequency Converter"
Moscow, Pribory i sistemy upravleniya, No 6, 1972, pp 27-29

Abstract: The description is given of a voltage-to-frequency converter, developed in the form of an integrated circuit for use in a complex of frequency-digital control instruments for general industrial use. Its design is basically one of balanced conversion with pulsed feedback, a principle which is now recognized as extremely promising since it permits obtaining a highly rapid operation speed and low conversion error. The basic components of the converter circuit are integrated circuits of the 101, 122, and 140 types, and the operation of the entire arrangement is based on the charge of a capacitor in an integrating circuit by a current proportional to the input voltage, and its discharge by pulses of a stable quantity of electricity. The block diagram and schematic of the instrument are given together with a mathematical analysis of its capabilities, and the circuit operation is qualitatively explained.

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USSR

LOPATIN, V. V.

UDC 532.516

"Concerning the Resistance of Vibrating Cylinder in Liquids"

Kiev, Vopr. Tekhn. Teplofiz -- Sbornik (Problems of Technical Thermophysics -- Collection of Works), Naukova Dumka, 1971, pp 165-168 (from Referativnyi Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2B673 by P. Ye. Mikhaylov)

Translation: Note is taken of the fact that in the work of N. V. Kalashnikov and V. I. Chernikin (The Vibratory Warming of Viscous Petroleum Products. Moscow, Gostoptekhnizat, 1961), hydraulic resistance during vibration is determined with no account taken of electrical and mechanical losses in the vibrator. Results of experiments with account taken of these losses are presented here graphically, and it is shown that as the vibrational Reynolds number R increases, hydraulic resistance decreases by about 20% within the interval of $2 < R < 20$, is halved when R is between 20 and 40, and undergoes practically no change within the interval of $40 < R < 4 \times 10^3$. With a density increase of the mechanical energy flux, during streamline flow or vibrations, from 2 to 2×10^4 watts per square meter, the heat-transfer coefficient monotonously increases several times over. It is shown that heat transfer is more efficient during transverse vibrations than in a steady-state flow or during

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UDC: 548.4

BELYATSKAYA, N. S., GRISHINA, S. P., ~~LOPATIN, Ye. P.~~, MIL'-
VIDSKIY, M. G., OSVENSKIY, V. B., FOMIN, V. G., State Scien-
tific Research and Design Institute for the Rare Metals
Industry

"Structural Singularities of Gallium Arsenide Single Crystals
Heavily Doped With Donor Impurities"

Moscow, Kristallografiya, Vol 17, No 1, Jan/Feb 72, pp 158-165

Abstract: A study is made of the effect which tellurium,
selenium, and sulfur doping has on the degree of perfectness
of GaAs single crystals. Metallographic and radiographic
studies show that doping to high concentrations with donor
impurities ($n > 10^{18}/\text{cc}$) may lead to an appreciable reduction
in the dislocation density and to a specific distribution in
the volume of the GaAs single crystals due to strengthening
of the material and intensification of the process of dislo-
cation creep during doping. Nonhomogeneous dopant distribu-
tion in heavily doped single crystals is an additional source

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USSR

BELYATSKAYA, N. S. et al., Kristallografiya, Jan/Feb 72, pp 158-165

of dislocations. Structural investigations show that in the process of growing gallium arsenide single crystals heavily doped with donor impurities, partial decomposition of supersaturated solid solutions takes place, accompanied by the development of additional internal stresses and a lumped structure within the crystal. Five figures, one table, bibliography of eleven titles.

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- 33 -

TITLE--STUDY OF COSMIC RAYS AND THE RADIATION BELTS BY A VERTICAL SPACE
PROBLE -U-
AUTHOR--(05)-VERNOV, S.N., VAKULOV, P.V., KUZNETSOV, S.N., LOGACHEV, YU.I.,
LOPATINA, G.B.
COUNTRY OF INFO--USSR
SOURCE--MCSLCh, KOSMICHESKIYE ISSLEDOVANIYA, VOL VIII, NO 3, 1970, PP
408-417
DATE PUBLISHED--70
SUBJECT AREAS--ATMOSPHERIC SCIENCES, MISSILE TECHNOLOGY, PHYSICS
TOPIC TAGS--COSMIC RAY, RADIATION BELT, UPPER ATMOSPHERE, SOUNDING ROCKET,
ELECTRON SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0554
CIRC ACCESSION NO--AP0132740
STEP NO--UR/0293/70/008/003/0408/0417
UNCLASSIFIED

2/3 033

CIRC ACCESSION NO--AP0132740
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT. THIS PAPER GIVES THE RESULTS OF PROCESSING OF DATA OBTAINED USING A VERTICAL SPACE PROBE LAUNCHED ON 12 OCTOBER 1967 FOR OBTAINING AN INSTANTANEOUS CROSS SECTION OF THE UPPER ATMOSPHERE TO AN ALTITUDE OF ABOUT 4,000 KM. WITH RESPECT TO COSMIC RAYS: A) IT WAS POSSIBLE TO OBTAIN THE VERTICAL VARIATION OF COSMIC RAYS AT 1.7 LESS THAN L LESS THAN 2.2, WHICH FOR THE MOST PART CAN BE ATTRIBUTED TO CHANGE IN GEOMETRIC AND MAGNETIC SCREENING OF THE EARTH. B) IT WAS POSSIBLE TO DETERMINE THE COSMIC RAY MULTIPLICATION FACTOR FOR THE COUNTER SITUATED ON THE SURFACE OF THE OBJECT. WITH A MEAN LENGTH OF THE COSMIC RAY PATH IN THE MATTER OF THE OBJECT SIMILAR TO 50 G-CM PRIME2 THE COSMIC RAY MULTIPLICATION FACTOR ATTAINS VALUES SIMILAR TO 20PERCENT. C) THERE IS A MARKED ANISOTROPY OF THE FLUX OF ALBEDO COSMIC RAYS ATTAINING SIMILAR TO 40PERCENT. ACCORDINGLY, IN AN ANALYSIS OF COSMIC RAY DATA OBTAINED OVER THE ATMOSPHERE BY USE OF DETECTORS HAVING A GREAT LENGTH AND SMALL DIAMETER IT IS NECESSARY TO TAKE INTO ACCOUNT DETECTOR ORIENTATION RELATIVE TO THE MAGNETIC LINE OF FORCE. WITH RESPECT TO THE RADIATION BELTS: A) IT WAS POSSIBLE TO MEASURE THE ELECTRON SPECTRUM AT DIFFERENT L SHELLS IN THE RANGE 2 LESS THAN L LESS THAN 3. FOR A SPECTRUM IN THE FORM IN GREATER THAN E_{SUBE} SIMILAR TO $EXP(MINUS E_{SUBE} - E_{SUBO})$ IN THE ENERGY RANGE 40 LESS THAN E_{SUBE} LESS THAN 300 KEV THE SPECTRUM IS SOFTENED WITH AN INCREASE IN L ; WHEREAS FOR ENERGIES 300 LESS THAN E_{SUBE} LESS THAN 600 KEV IT BECOMES HARDER. B) A STUDY WAS MADE OF THE PITCH ANGLE DISTRIBUTION OF ELECTRONS WITH E_{SUBE} LESS THAN 40 KEV AT DIFFERENT L SHELLS (L EQUALS 2.2, 2.6, 3.0).

UNCLASSIFIED

033
CIRC ACCESSION NO--AP0132740 UNCLASSIFIED PROCESSING DATE--20NOV70
ABSTRACT/EXTRACT--APPROXIMATION OF THE PITCH ANGLE DISTRIBUTION BY THE
FUNCTION $N(\alpha) \sin \alpha$ PRIMEN α GIVES FOR THE LEAKING PARTICLES AT L
EQUALS 2.2 N VALUES FROM SIMILAR TO 4 TO SIMILAR TO 10, WHEREAS FOR L
EQUALS 2.6 AND 3.0 N SIMILAR TO OR EQUAL TO 1. FOR NONLEAKING PARTICLES
 N SIMILAR TO OR EQUAL TO 1 AT ALL L. C) AN INCREASE IN THE FLUXES OF
LEAKING ELECTRONS WITH AN INCREASE IN L WAS DISCOVERED.

UNCLASSIFIED

173 033 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--STUDY OF COSMIC RAYS AND THE RADIATION BELTS BY A VERTICAL SPACE
PROBLE --U--
AUTHOR--(05)--VERNOV, S.N., VAKULOV, P.V., KUZNETSOV, S.N., LUGACHEV, YU.I.,
LOPATINA, G.B.
CCUNTRY OF INFO--USSR
SOURCE--MOSCOW, KOSMICHESKIYE ISSLEDOVANIYA, VOL VIII, NO 3, 1970, PP
408-417
DATE PUBLISHED--70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, MISSILE TECHNOLOGY, PHYSICS
TOPIC TAGS--COSMIC RAY, RADIATION BELT, UPPER ATMOSPHERE, SOUNDING ROCKET,
ELECTRON SPECTRUM

CCNTRCL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0554

STEP NO--UR/0293/70/008/003/0408/0417

CIRC ACCESSION NO--AP0132740

UNCLASSIFIED

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PROCESSING DATE--20NOV70

2/3 033

CIRC ACCESSION NO--AP0132740

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THIS PAPER GIVES THE RESULTS OF PROCESSING OF DATA OBTAINED USING A VERTICAL SPACE PROBE LAUNCHED ON 12 OCTOBER 1967 FOR OBTAINING AN INSTANTANEOUS CROSS SECTION OF THE UPPER ATMOSPHERE TO AN ALTITUDE OF ABOUT 4,000 KM. WITH RESPECT TO COSMIC RAYS: A) IT WAS POSSIBLE TO OBTAIN THE VERTICAL VARIATION OF COSMIC RAYS AT 1.7 LESS THAN L LESS THAN 2.2, WHICH FOR THE MOST PART CAN BE ATTRIBUTED TO CHANGE IN GEOMETRIC AND MAGNETIC SCREENING OF THE EARTH. B) IT WAS POSSIBLE TO DETERMINE THE COSMIC RAY MULTIPLICATION FACTOR FOR THE COUNTER SITUATED ON THE SURFACE OF THE OBJECT. WITH A MEAN LENGTH OF THE COSMIC RAY PATH IN THE MATTER OF THE OBJECT SIMILAR TO 50 G-CM PRIME2 THE COSMIC RAY MULTIPLICATION FACTOR ATTAINS VALUES SIMILAR TO 20PERCENT. C) THERE IS A MARKED ANISOTROPY OF THE FLUX OF ALBEDO COSMIC RAYS ATTAINING SIMILAR TO 40PERCENT. ACCORDINGLY, IN AN ANALYSIS OF COSMIC RAY DATA OBTAINED OVER THE ATMOSPHERE BY USE OF DETECTORS HAVING A GREAT LENGTH AND SMALL DIAMETER IT IS NECESSARY TO TAKE INTO ACCOUNT DETECTOR ORIENTATION RELATIVE TO THE MAGNETIC LINE OF FORCE. WITH RESPECT TO THE RADIATION BELTS: A) IT WAS POSSIBLE TO MEASURE THE ELECTRON SPECTRUM AT DIFFERENT L SHELLS IN THE RANGE 2 LESS THAN L LESS THAN 3. FOR A SPECTRUM IN THE FORM $(N \text{ GREATER THAN } E \text{ SUBE})$ SIMILAR TO $\exp(\text{MINUS } E \text{ SUBE} - E \text{ SUBO})$ IN THE ENERGY RANGE 40 LESS THAN E SUBE LESS THAN 300 KEV THE SPECTRUM IS SOFTENED WITH AN INCREASE IN L, WHEREAS FOR ENERGIES 300 LESS THAN E SUBE LESS THAN 600 KEV IT BECOMES HARDER. B) A STUDY WAS MADE OF THE PITCH ANGLE DISTRIBUTION OF ELECTRONS WITH E SUBE LESS THAN 40 KEV AT DIFFERENT L SHELLS (L EQUALS 2.2, 2.6, 3.0).

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UNCLASSIFIED

PROCESSING DATE--20NOV70

3/3 : 033

CIRC ACCESSION NO--AP0132740

ABSTRACT/EXTRACT--APPROXIMATION OF THE PITCH ANGLE DISTRIBUTION BY THE
FUNCTION $N(\alpha) \sin \alpha$ GIVES FOR THE LEAKING PARTICLES AT L
EQUALS 2.2 N VALUES FROM SIMILAR TO 4 TO SIMILAR TO 10, WHEREAS FOR L
EQUALS 2.0 AND 3.0 N SIMILAR TO OR EQUAL TO 1. FOR NONLEAKING PARTICLES
N SIMILAR TO OR EQUAL TO 1 AT ALL L. C) AN INCREASE IN THE FLUXES OF
LEAKING ELECTRONS WITH AN INCREASE IN L WAS DISCOVERED.

UNCLASSIFIED

1/2 044 UNCLASSIFIED
TITLE--A RADIATION HEATING UNIT -U-
AUTHOR--(02)-SPITSYN, B.V., LOPATINA, G.G.

COUNTRY OF INFO--USSR

SOURCE--V SB. TEPLOFIZ. SVOYSTVA TVERDYKH TEL PRI VYSOKIKH TEMPERATURAKH.
REFERENCE--RZH-FIZIKA, NO 1, JAN 70, ABSTRACT NO 1A136MPERATURES, VOL. 1,
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HIGH TEMPERATURE R AND D, HIGH TEMPERATURE SEMICONDUCTOR,
DIELECTRIC MATERIAL, LABORATORY FURNACE, GAS DISCHARGE TUBE, TEMPERATURE
MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/0999

ACCESSION NO--AR0112159
UNCLASSIFIED

PROCESSING DATE--500-

PROCESSING DATE--30OCT70

UNCLASSIFIED

2/2 044

CIRC ACCESSION NO--AR0112159
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE RADIANT ENERGY SOURCE USED ON THIS UNIT FOR LOCAL HEATING OF SPECIMENTS OF DIELECTRICS AND HIGH TEMPERATURE SEMICONDUCTOR MATERIALS WAS A HIGH POWER (6 KW) SUPERHIGH PRESSURE XENON GAS DISCHARGE TUBE WHICH GIVES A STABLE TEMPERATURE OF THE ORDER OF 2,000DEGREESC IN THE WORKING SPOT FOR SEVERAL DOZEN HOURS. THE DESIGN OF THIS UNIT PERMITS NONCONTACT MEASUREMENT AND PROVIDES FOR TEMPERATURE REGULATION WITH AN ERROR OF 5DEGREESC. THE HEATING IS DONE IN A HIGHLY PURE AND CONTROLLABLE ATMOSPHERE BY PLACING THE SPECIMENT IN A SPECIAL QUARTZ CHAMBER.

UNCLASSIFIED

1/2 008
TITLE--OPENING OF THE BENZOXAZINE RING IN 2, SUBSTITUTED
4,4,DIETHYL,4H,1,3,BENZOXAZINES.-U-
AUTHOR-(03)-LOPATINA, K.I., KLYUYEV, S.M., ZAGOREVSKIY, V.A.
COUNTRY OF INFO--USSR
SOURCE--KHIM. GETEROTSIKL. SUEIN. 1970, (2), 279-80
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HYDROLYSIS, HETEROCYCLIC NITROGEN COMPOUND, BENZENE DERIVATIVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1983/1193
CIRC ACCESSION NO--AP0054092
UNCLASSIFIED
PROCESSING DATE--0906170
STEP NO--UR/0409/70/000/002/0279/0280

UNCLASSIFIED

PROCESSING DATE--09OCT70

2/2 008

CIRC ACCESSION NO--AP0054092
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE HYDROLYTIC OPENING OF THE
BENZOXAZINE RING WAS READILY ACCOMPLISHED IN PRESENCE OF CU(II) SALT AND
ACOH. THUS, EQUIMOL. SOLN. OF IA AND CU(II) SALT IN 70PERCENT ACOH WAS
STIRRED 2 HR TO YIELD 40.7PERCENT IIA, M. 131020DEGREES. IB (0.02 MOLE)
IN 20 ML ETOH WAS ADDED TO 0.02 MOLE CU(II) SALT, 0.01 MOLE ACONA IN 50
ML 70PERCENT ETOH ADDED, AND THE MIXT. STIRRED 2 HR TO GIVE 50PERCENT
IIB, M. 119-20DEGREES.

UNCLASSIFIED

1/2 012
TITLE--BENZOXAZINES AND RELATED COMPOUNDS. II. SYNTHESIS OF 2 SUBSTITUTED
4,4 DIALKYL 4H 1, 3 BENZOXANINES -U-
AUTHOR-(03)-LUPATINA, K.I., KLYUYEV, S.M., ZAGOREVSKIY, V.A.
COUNTRY OF INFO--USSR
SOURCE--KHIM. GETEROTSIKL. SUEIN. 1970, (1), 43-4
DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY
TOPIC TAGS--CHEMICAL SYNTHESIS, BENZENE DERIVATIVE, HETEROCYCLIC OXYGEN
COMPOUND, ORGANIC NITRILE COMPOUND, CHLORINATED ORGANIC COMPOUND,
AROMATIC ESTER, ORGANIC AZINE COMPOUND, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1993/0548

STEP NO--UR/0409/70/000/001/0043/0044

ACCESSION NO--AP0113439

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--09OCT70

2/2 012

CIRC ACCESSION NO--AP0113439
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. TO A COOLED (0DEGREES) MIXT. OF
5.4 G O, HYDROXYPHENYLDIETHYLCARBINOL, AND 5.3 G ACYLOTRILE, WAS ADDED
DROPWISE 5 ML 70PERCENT HCL SUB4 SO THAT THE REACTION MIXT. REMAINED AT
0-10DEGREES, AND THE MIXT. MADE ALK. WITH AQ. NH SUB3 AFTER 24 HR, TO
GIVE 40PERCENT I (R PRIME1 EQUALS CH:CH SUB2), B SUB1 83-4DEGREES.
SIMILARLY WERE PREPD. I (R PRIME1, B.P.-MM, AND PERCENT YIELD GIVEN):
CH SUB2 CL, 106-7DEGREES-1, 32; CH SUB2 PH, 116-17DEGREES-0.03, 57;
P, CLC SUB6 H SUB4, 153-4-0.03, 46; CH SUB2 CO SUB2 ET, 109-10-0.06, 32;
ME SUB2 COH, 118-19-4, 8.6; 6 PIPERIDINOHEXYL, 178-9-0.02, 41;
6, (4,4, DIETHYL, 4H, 1,3, BENZOXAZIN, 2, YL) HEXYL, 138.5-9.0DEGREES, 50; ME,
83-4DEGREES-4, 22. ATTEMPTS TO PREP. THE BENZOXAZINE FROM BETA
PIPERIDINOPROPIONITRILE WERE UNSUCCESSFUL.
FARMKOL. KHMIDTER., MOSCOW, USSR.

FACILITY: INST.

UNCLASSIFIED

USSR

VINOGRADOV, A. V., ZEMLYANUKHINA, N. A., PAVLOVA, I. V., DRONOVA, M. P., and
LOPATINA, N. N.

"Correlation of Methods of Determining Aluminum in Beryllium and in its Alloys"

Moscow, Zavodskaya Laboratoriya, Vol 39, No 2, 1973, pp 148-149

Abstract: For the determination of 0.1-30% aluminum in beryllium and in beryllium-aluminum alloys methods are recommended which do not require preliminary separation of these elements. The photometric method with methylthymol blue (MTB) is recommended for concentrations $\gg 0.1\%$ Al. Be did not give a colored complex with MTB at pH 3, but in high concentrations Be lowers the optical density of the solution. Complexone-III makes it possible to determine Al in the presence of many elements shielded by the complexone. A verification was made of the effect of Be on the Complexometric determination of Al by means of back titration of complexone excess by a solution of thorium salt with MTB indicator at pH 3 in solutions with Al:Be from 1:1 to 1:20. The examination of the gravimetric method with hydroxyquinoline showed that high concentrations of Be hinder the precipitation of Al. A comparative evaluation of the three methods on two samples of binary Be-Al alloys revealed that the gravimetric-hydroxyquinoline method is most exact and the photometric method is most rapid. The latter is recommended and its practicability is discussed. One table, nine bibliographic references.

1/1

Organ and Tissue Transplantation

UDC 576.8.097.2.095.18:615.365.018.53

USSR

KRASKINA, N. A., KHOLCHEV, N. V., and LOPATINA, T. K., Moscow
Institute of Epidemiology and Microbiology, Moscow

"Characteristics of the Depressive Effect of Antilymphocyte
Serum and Antilymphocyte Globulin on the Formation of Antibodies
in Mice"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii,
Vol 48, No 2, Feb 71, pp 83-89

Abstract: Antilymphocyte serum was obtained by injecting mouse lymphocytes into rabbits. The serum had an immunodepressive effect on mice given injections of sheep erythrocytes: the formation of antibodies to the erythrocytes was sharply reduced. No immunodepressive effect of antilymphocyte serum was observed with respect to formation in mice of antibodies to the soluble polysaccharide Vi antigen of *S. typhi*, however. By saturating antilymphocyte serum 33-40% with $(\text{NH}_4)_2\text{SO}_4$ fractions were isolated from it whose immunodepressive effect considerably exceeded that of the initial serum. These fractions consisted

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USSR

KRASKINA, N. A., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 48, No 2, Feb 71, pp 83-89

of gamma-globulin (64-78%) and beta-globulin (22-36%). The effect of antilymphocyte serum in depressing the formation of antibodies to sheep erythrocytes could be assessed conveniently by determining the ED₅₀ of the serum, i.e., its mean dose in mg protein that reduced by 50% the number of antibody-producing cells in the spleen vs. the number of these cells in controls. The specific activity of antilymphocyte preparations with respect to their immunodepressive effect can be determined on the basis of the immunological response of mice to sheep erythrocytes by using these procedures.

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1/2 015
UNCLASSIFIED
PROCESSING DATE—30OCT71
TITLE—MECHANISM OF POLYURETHANE SYNTHESIS IN THE PRESENCE OF DIBUTYLTIN
DILAURATE —U—
AUTHOR—(04)—LIPATOVA, T.E., BAKALO, L.A., SIROTINSKAYA, A.L., LOPATINA,
V.S.
COUNTRY OF INFO—USSR
SOURCE—VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 911-16
DATE PUBLISHED—70

SUBJECT AREAS—MATERIALS, CHEMISTRY

TOPIC TAGS—POLYURETHANE RESIN, POLYCONDENSATION, ORGANOTIN COMPOUND,
GLYCOL, ISOCYANATE, COMPLEX COMPOUND, ORGANIC SYNTHESIS

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAE—2000/0676

STEP NO—UR/0459/70/012/004/0911/0916

CIRC ACCESSION NO—AP0124348

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE—30OCT7

2/2 015

CIRC ACCESSION NO—AP0124348

ABSTRACT/EXTRACT—(U) GP-0-

ABSTRACT. THE POLYCONDENSATION OF OCN(CH
SUB2)SUB6 NCO WITH HO(CH SUB2 CH SUB2 O)SUB2 H IN THE PRESENCE OF BU
SUB2 SN DILAURATE (I) PROCEEDS AT A CONST. RATE LESS THAN OR EQUAL TO
70PERCENT CONVERSION, I.E., IT IS INDEPENDENT OF THE MONOMER CONCN. NO
SIDE PRODUCTS ARE PRODUCED AND POLYURETHANES EITHER HAVE NO EFFECT OR
RETARD THE REACTION. THE REACTION RATE INCREASES WITH I CONCN. A
REACTION MECHANISM IS PROPOSED INVOLVING THE FORMATION OF A GLYCOL
DIISOCYANATE I COMPLEX. FACILITY: INST. KHIM. VYSOKOMOL.
SOEDIN., KIEV, USSR.

UNCLASSIFIED

USSR

LOPATINA, Zh. M., Department of Infectious Diseases, Semipalatinsk Medical
Institute

"Seasonal Prophylactic Anti-Relapse Courses of Treatment of Brucellosis Patients
Without Complications"

Alma-Ata, Zdravookhraneniye Kazakstana, No 10, Oct 71, pp 52-53

Abstract: The problem of brucellosis treatment has not yet been solved in Kazakhstan, particularly in the Semipalatinskiy region. Recurrence of the infection is frequently observed. Supplementary measures of treatment are proposed in this paper; these measures include observations in the spring and fall, and desensitizing treatments to reduce allergic reactions in the season of highest relapse probability. The prophylactic treatment consisted of administration of a daily dose of 1.0 g aspirin and a nightly dose of 0.25 g dimedrol in combination with vitamin C and group B preparations for a period of 3 to 4 weeks. The seasonal check-ups were handled on an out patient basis. The effectiveness of the above measures was established for a group of 647 patients, 124 of whom had acute brucellosis and 384 had chronic brucellosis. Recurrence of the infection was observed in 65.3% of patients in the control group, whereas this percentage was 42.47% in the group of

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LOPATINA, Zh. M., Zdravookhraneniye Kazakstana, No 10, Oct 71, pp 52-53

patients treated prophylactically. In most treated patients (89.73%) a stabilization and steady compensation process was observed after 3-4 years. The measures studied are recommended for clinical use.

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Therapy

USSR

LOPATINA, Zh. M., BEREZNITSKAYA, L. M., DEGTYAREV, Yu. N., and KOZHEVNIKOVA, L. V., Semipalatinsk Medical Institute

"Prognostic Value of Dysproteinemia and Increased Vascular Permeability in Brucellosis Patients"

Alma-Ata, Zdravookhraneniye Kazakhstana, No 1, 1972, pp 28-30

Abstract: Observation of 531 brucellosis patients showed a relationship between the dynamics of vascular permeability, serum proteins, and the response to therapy. Dysproteinemia and increasing vascular permeability were characteristic of those refractory to therapy. Follow-up examinations of patients after discharge from the hospital revealed that recurrences were most likely among those with continuing dysproteinemia and increased vascular permeability. In most persons examined in a period of clinical remission, serum proteins and vascular permeability were within normal limits. A few exhibited pathological changes -- decrease in albumins, increase in alpha and gamma globulins, and slightly increased vascular permeability -- and it was this group that was mostly likely to have relapses. Thus, dysproteinemia and increased vascular permeability are unfavorable prognostic signs. However, a normal blood picture in a period of remission is not a reliable indicator of complete

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LOPATINA, Zh. M., et al., Zdravookhraneniye Kazakhstana, No 1, 1972, pp 28-30
recovery, for it was observed at this time even in persons who subsequently
suffered relapses.

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USSR

UDC 616.981.42-084.3

LOPATINA, ZH. M., Semipalatinsk Medical Institute

"Therapeutic and Prophylactic Measures for Brucellosis Patients Kept Under
Dispensary Supervision "

Moscow, Sovetskaya Meditsina, No 11, 1971, pp 128-132

Abstract: Based on a 3-5 year study conducted with 1115 brucellosis patients, complementary prophylactic treatments, begun at the time of remission, are recommended as part of the dispensary program. The selection of preventive medications was specifically designed with regard to the form and stage of the disease, allergic reactivity, estimated effectiveness, and character of the remaining symptoms. Of the 1115 patients, 738 received the various therapies, and the rest acted as a control group. The group of brucellosis patients with full compensation received a spring and fall preventive medication course consisting of aspirin, dimedrol, and vitamins (B and C series). Patients with incomplete compensation coupled with focal inflammations and arthralgia were placed on a regimen of prednisolone, aspirin, and chloroquine. At the conclusion of the period of chloroquine maintenance, these patients underwent the seasonal program of treatment. Chronic brucellosis

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USSR

LOPATINA, ZH. M., Sovetskaya Meditsina, No 11, 1971, pp 128-132

patients with a high degree of allergic reactivity, began a desensitization course of brucellin injected subcutaneously, starting with subliminal doses and gradually increasing. When they had reached a steady state of compensation, they, too, were placed on a seasonal prophylactic program. Results showed that the incidence of recurrence was significantly reduced for all groups receiving the preventive medication, especially among patients initially having full compensation, and next most successful for those with incomplete compensation and inflammations. Although the percentage recurrence figure for chronic sufferers with allergic reactivity was high, it was significantly lower than the rate of recurrence in the untreated group. It was noted further that a successful densitization effect from brucellin therapy was positively correlated with a lower recurrence figure. For all treated groups the length of time between remission and recurrence was increased.

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Pathology

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UDC 616.981.42-07.1 [616.153.96+616.13-008.6]-07

LOPATINA, ZH. MO., BEREZNITSKAYA, A. M., DEGTYAREV, YU. N., and KOZHEVNIKOVA,
L. V.

"Dynamics of Protein Fractions in the Blood Serum and Vascular Permeability
in Patients With Brucellosis"

Moscow, Terapevticheskiy Arkhiv, Vol 43, No 2, Feb. 71, pp 62-67

Abstract: Clinical and laboratory studies of patients with brucellosis were conducted to determine shifts in protein content and vascular permeability as supplementary criteria indicating the activity of brucellosis infection. Total protein content was studied with the use of a refractometer. The serum content of protein fractions by the method of paper electrophoresis and vascular permeability by the rate of semiabsorption of 5 millicuries of I131 from intracutaneous deposits. A total of 531 patients with brucellosis and 50 healthy people in the control group were investigated. An analysis of the data obtained revealed dysproteinemia, hypoalbuminemia, an increase in the blood content of alpha- and gamma-globulins, and increased vascular permeability in the overwhelming majority of patients during the most active periods of brucellosis, especially when on high allergic reactivity and inflammation were also present. A tendency toward normalization of the above

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LOPATINA, ZH. MO., et al., Terapevticheskiy Arkhiv, Vol 43, No 2, Feb 71,
pp 62-67

criteria was observed with abatement of clinical manifestations of brucellosis and the remission of the disease. Therapy consisted of the administration of antibiotics -- tetracycline + streptomycin, vaccine in combination with trasyolol, prednisolone, aspirin or pyrasolone preparations. All produced positive results. Some of the preparations apparently affected the dynamics of protein shifts and vascular permeability changes; no precise parallelism, however, has been established. After being discharged from the hospital, the patients were kept under observation for periods of 3-4 years. Retardation of the normalization of the protein picture and vascular permeability was noted in a number of patients, indicating the persistence of brucellosis process. The recurrence of the disease occurred most frequently among these patients.

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USSR

UDC 621.165.533.6

ZIL'BERMAN, A. S., Candidate of Technical Sciences, LOPATITSKIY, A. O., Candidate of Technical Sciences, NAKHMAN, Yu. V., Candidate of Technical Sciences, VOL'FSON, I. M., Engineer, OZERNOV, L. A., Engineer, and PAKHOMOV, V. A., Engineer, Leningrad Metal Plant, Higher Technical Educational Institution at Leningrad Metal Plant

"Additional Energy Losses Through Periodical Unsteadiness of the Flow in Rotor Blades of Turbine Stages"

Moscow, Teploenergetika, No 10, Oct 73, pp 55-59

Abstract: The quantitative coupling of additional unsteady profile losses of energy in rotor blades with normal operation turbine stage parameters was experimentally investigated on stage models with more than twenty combinations of nozzle and rotor lattices of various types. A complex of factors affecting the change of profile energy losses in rotor lattices was analyzed. Based on generalized experimental data, a functional dependence of additional unsteady profile losses in rotor lattices ($\Delta \xi_r$) on a derived criterion of unsteadiness (Y) is suggested. The

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ZIL'BERMAN, A. S., et al., Teploenergetika, No 10, Oct 73, pp 55-59

function $\Delta\zeta_r=F(Y)$ for all investigated stages is shown with and without accounting for deviations from the calculated regime. The additional losses increase essentially (from 5.0 to 57.5 %) within the limits $0.4 \cdot 10^{-2} < Y < 1.2 \cdot 10^{-2}$ and remain practically constant at further increase of Y . The derived functional dependence encompasses typical cases of stages of modern stationary turbines in the zone of moderate hub ratios. Two figures, one table, fifteen formulas, fourteen bibliographic references.

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Acc. Nr.

AP0053895

Abstracting Service:

CHEMICAL ABST.

Ref. Code

6-70 UR0076

115106t Molecular theory on the adsorption of simple molecules on nonporous ionic crystals. II. Statistical calculation of thermodynamic properties of argon adsorbed on potassium chloride. Kiselev, A. V.; Lopatin, A. A.; Razumova, E. R. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR). *Zh. Fiz. Khim.* 1970, 44(1), 150-4 (Russ). Configurational integrals and adsorption potentials $\phi(T)$ of Ar adsorbed on KCl crystals were calcd., and differential thermodynamic functions U_a , μ_a , and S_a (molal energy of adsorption, chem. potential of adsorption, and entropy of adsorption) of adsorbed Ar were obtained from statistical thermodynamic calcs. for low coverage of the surface. Calcd. isosteric heats of adsorption ($-Q_{st} = \Delta H_a = \phi(T) - RT$) agreed well with exptl. values obtained for adsorption of Ar on the face of 100 KCl crystals. Good agreement for low and medium coverages (θ) was also found for calcd. and exptl. $\Delta\mu_a$ and ΔS_a as a function of θ . Differential heat capacity of adsorbed Ar was estd. as 0.3 cal/degree mole. The mobility of the adsorbed Ar atom was high enough so that it could be moved from one site to another not only by gas phase transfer but also through 2-dimensional diffusion in the adsorption layer.

J. Hala]

REEL/FRAME
19830972

C.K.

18

USSR

UDC 612.6.02:061.3(47) «1970»

LOPATKIN, N. A., and DARENKOV, A. F.

"The Fifth All Union Conference on Transplantation of Organs and Tissues"

Moscow, Urologiya i Nefrologiya, No 3, May/Jun 71, pp 71, 72

Abstract: The conference was held in Gorkiy on 16-18 December 1971 and was attended by surgeons, immunologists, urologists, nephrologists, pathological physiologists, and specialists in other areas, who discussed the results achieved in clinical and experimental organ and tissue transplantation, immunological matching of donors and recipients, studies of tissue incompatibility, methods of preserving organs and tissues, and some organizational problems. While considerable progress has been made in the establishment of new transplantation centers and in surgical techniques, the problem of tissue incompatibility remains essentially unresolved. The decision was made to hold the next meeting in Riga in 1973.

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1/2 008
TITLE--ZINC FLUORIDE -U-

UNCLASSIFIED

PROCESSING DATE--27NOV70

AUTHOR-(03)-LOPATKINA, G.A., KOLOSOVA, T.N., SUSLOVA, O.S.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,091

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970 47(10)

DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, ZINC FLUORIDE, CHEMICAL PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1466

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126997

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0126997

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ZN FLUORIDE IS PREPD. FROM ZNO AND
A IS GREATER THAN OF EQUAL TO 30PERCENT EXCESS OF FLUORIDE, BIFLUORIDE
WITH HEATING UP TO 300DEGREES AT A RATE NOT EXCEEDING 1.2DEGRESS-MIN.

UNCLASSIFIED

1/3 041 UNCLASSIFIED PROCESSING DATE--090C170
TITLE--HEAT RESISTANT CAST IRONS FOR GLASS MOLDS -U-
AUTHOR--(051)-YAKUBOVICH, B.I., POGODINA ALEKSEYEVA, K.M., UDALTSOV, V.I.,
LOPATKINA, L.I., KULINICH, V.P.
COUNTRY OF INFO--USSR
SOURCE--STEKLO KERAM. 1970, 27(2), 16-18
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--HEAT RESISTANT METAL, CAST IRON, MOLDING MATERIAL, PYREX
GLASS, ANNEALING, SILICON, PHOSPHORUS, NICKEL CONTAINING ALLOY,
GRAPHITE, GRAIN BOUNDARY, PLASTICITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1955 STEP NO--UR/0072/70/027/002/0016/0018
CIRC ACCESSION NO--AP0112924
UNCLASSIFIED

2/3 041

UNCLASSIFIED

PROCESSING DATE—09OCT70

CIRC ACCESSION NO—AP0112924

ABSTRACT/EXTRACT—(U) GP-0- ABSTRACT. THE EFFECT OF CHEM. COMPN. OF FERRITIC ANNEALED CAST IRONS CONTG. GLOBULAR GRAPHITE ON THE RESISTIVITY OF THE DIES TO THERMAL FATIGUE DURING THE MOLDING OF ARTICLES FROM PYREX TYPE GLASS WAS INVESTIGATED. THE EXPTL. CAST IRONS WERE MELTED IN AN INDUCTION ELEC. FURNACE AND WERE TWICE SUBJECTED TO GRAPHITIZING ANNEALING UNDER SIMILAR CONDITIONS (HEATING TO 1000DEGREES, HOLDING THERE FOR 4 HR, COOLING AT A RATE OF 50DEGREES PER HR TO 700DEGREES, HOLDING THERE FOR 4 HR, COOLING IN THE FURNACE TO 350DEGREES, AND COOLING IN AIR). AFTER THE ANNEALING, A SMALL PORTION OF THE PEARLITE REMAINED ONLY IN THE PHOSPHIDE EUTECTIC INCLUSIONS. ALL CAST IRONS STUDIED CONTAINED SMALLER THAN 0.01PERCENT S, 0.25-0.35PERCENT MN, AND SIMILAR TO 0.8PERCENT NI. THE C, SI, AND P CONTENT, IN ORDER TO INVESTIGATE THEIR EFFECT ON THE THERMAL STABILITY, WAS VARIED WITHIN THE FOLLOWING LIMITS: C 3.35-3.7, SI 1.7-2.1, AND P 0.05-0.35PERCENT. IN ORDER TO OBTAIN GLOBULAR GRAPHITE, THE CAST IRONS WERE MODIFIED WITH MG. PLUNGERS WERE PREPD. FROM THE EXPTL. CAST IRONS, AND THERMAL STABILITY OF THE CAST IRONS WAS STUDIED. THE CAST IRON CONTG. THE LEAST AMT. OF SI AND P WAS THE MOST STABLE THERMALLY. SI AND P ARE THE ELEMENTS WHICH DECREASE THE THERMAL STABILITY OF FERRITIC MOLDING CAST IRONS. ALLOYING WITH NI INCREASED THE THERMAL STABILITY OF THE CAST IRON WITH INCREASED P CONTENT. ANALOGOUS RESULTS WERE OBTAINED WHEN TESTING CASTINGS OF UNALLOYED CAST IRONS CONTG. GLOBULAR GRAPHITE AND MODIFIED WITH CE-MG 1.

UNCLASSIFIED

3/3 041

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112924

ABSTRACT/EXTRACT--THERMAL FATIGUE CRACKS WERE OBSD. PRIMARILY ALONG THE BOUNDARIES OF THE FERRITE GRAINS AT THE SPOTS OF THE DEPRESSIONS IN THE SURFACE OF THE PLUNGERS AND AT THE SPOTS WHERE GRAPHITE GLOBULES WERE CLOSE TO THE SURFACE. AS THEY PROPAGATE, THE CRACKS INTERSECT THE GRAINS. THE HARMFUL EFFECT OF SI AND P ON THERMAL STABILITY OF ANNEALED CAST IRONS IS APPARENTLY ASSOC. WITH THE ENRICHMENT OF THE GRAIN BOUNDARIES BY THESE ELEMENTS. WITHIN THE RANGE INDICATED IN THIS WORK, P SHARPLY REDUCES THE PLASTICITY OF CAST IRON. FACILITY: VSES. ZAOCH. POLITEKH. INST., MOSCOW, USSR.

TEXT RECEIVED

12-021 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--WIDTH, OF (GD SUB2 0 SUB3) SUBX (GD CRD SUB3) SUB1 MINUS X EPR LINES

-U-
AUTHOR--GLINCHUK, M.D., KARMAZIN, A.A., KOSTYRYA, A.A., LOPATO, L.M.,
SHEVCHENKO, A.V.

COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(1) 59-62

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--EPR SPECTRUM, LINE WIDTH, LINE BROADENING, CHROMIUM OXIDE,
GADOLINIUM COMPOUND, METAL OXIDE, CHEMICAL COMPOSITION, TEMPERATURE
DEPENDENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1089/1345

STEP NO--UP/0185/70/015/001/0059/2062

CIRC ACCESSION NO--AP0107818

UNCLASSIFIED

272 021

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107818

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE SYSTEM GD SUB2 O SUB3-CR
SUB2 O SUB3 THE GD SUB2 O SUB3 CONTENT WAS VARIED BETWEEN 50 AND
100PERCENT. THE OBSD. INCREASE IN THE WIDTH OF THE EPR LINE WITH
INCREASING GD SUB2 O SUB3 CONTENT AROSE FROM DIPOLE DIPOLE AND EXCHANGE
INTERACTION. AT LOWER TEMP. THE INTENSITY OF THE EPR SIGNAL OF GD SUB2
SUB3 DECREASED; THE DISAPPEARANCE OF THE LINE AT 170DEGREESK WAS
ASSIGNED TO A MAGNETIC ORDERING OF THE CR ION SUBLATTICE.

UNCLASSIFIED

USSR

UDC 621.385.002.72:533.59

MOLCHANOVA, L.G., LOPATC, L.V.

"Use Of Small-Sized Sputter-Ion Pump For Detection Of Leaks In Sealed-Off Electrovacuum Devices"

Elektron.tekhnika. Nauch.-tekhn.sb.Elektron SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1971, No 9, pp 51-56 (from RZh:Elektronika i yeye primeneniye, No 1, Jan 72, Abstract No 1A44)

Translation: The possibility is experimentally confirmed of detecting the location of a leak in a sealed-off traveling-wave tube with a built-in sputter-ion [elektirorazryadnyy] pump by ventilation of the envelope by a jet of inert gas. One may consider argon as the best probe gas for detection of a leak. It makes it possible to observe a change of the discharge current of the pump with the presence of a leak during a prolonged time after discontinuation of the argon supply, which facilitates indication of a leak. The method described makes it possible quickly to detect inleakage with a satisfactorily precise determination of the location of the leak in sealed-off devices. Leaks with a magnitude on the order of 10^{-4} -- 10^{-5} 1.micron column of mercury/sec are detected after several seconds. 8 ref. A.P.

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LOPAYEV, E. V.

SO: JPRS 54039
13 SEP 71

Space Medicine

V. UPPER ATMOSPHERE AND SPACE RESEARCH

News

Biomedical Research on "Salyut"

A Pravda correspondent recently interviewed Candidates of Medical Sciences E. A. Lopayev and E. V. Lopayev concerning medical research aboard the "Salyut".

(Soviet Author)

Question: In what way does the medical instrumentation aboard the "Salyut" differ from that employed on earlier spacecrafts?

Answer: Traditional medical monitoring methods have been used in the past: measuring pulse, respiration and body temperature and registering the EEG. But now we are entering a new stage in space conquest which is characterized by prolonged flights. Man's high performance in space must be insured. We now know that the readaptation process in space is very difficult. The cosmonaut's most vulnerable spot is his cardiovascular system; it has weight on earth but not in space. For this reason it does not have the same distribution in his body on earth and in space. Much more research is required on the reaction of the cardiovascular system during weightlessness. On the "Soyuz" a system of sensors is worn on belts on the cosmonaut's body for registry of the most important health parameters. But medical examinations are required and these are made on so-called "medical days." A special instrument complex is used for this purpose. This makes it possible to investigate the cardiovascular, respiratory and other vitally important human systems at the level of the best terrestrial clinics. Such studies are much more complete than before. Moreover, earlier only the respiration rate was measured; now the minute volume of respiration, volume and rate of inhalation and exhalation, and vital capacity of the lungs are measured. Two methods are used in registering arterial pressure and the velocity of propagation of the pulse wave through the arteries. The kinetocardiogram is registered for determining the phase of the cardiac cycle. The instrumentation includes a device for registering the filling of the lower extremities with venous blood. Two more indices which are

1/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--EXPERIMENTAL PRODUCTION OF RHIZOBIUM MELILOTI MUTANTS WITH MODIFIED
ACTIVITY -U-
AUTHOR--(03)-IMSHENETSKIY, A.A., PARIYSKAYA, A.N., LOPES, L.E.
COUNTRY OF INFO--USSR
SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 2, PP 343-347
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ANTIBIOTIC RESISTANCE, BACTERIA MUTATION, MUTAGEN, NITROSO
COMPOUND, UREA
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1985/0398 STEP NO--UR/0220/70/039/002/0343/0347
CIRC ACCESSION NO--AP0100884

UNCLASSIFIED

2/2 016
CIRC ACCESSION NO--AP0100884

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PURPOSE OF THIS WORK WAS TO OBTAIN MUTANTS OF NODULE BACTERIA (A) WITH MODIFIED ABILITY FOR SYMBIOSIS AND (B) BEARING LABEL OF AUXOTROPHY AND RESISTANCE TO ANTIBIOTICS. ALL DEGREES OF ACTIVITY WERE ESTABLISHED IN 12 MUTANTS OF RH. MELILOTI, INDUCED BY NITROSOMETHYLUREA (NMU) AND RESISTANT TO NEOMYCIN. ALL OF 20 SPONTANEOUS MUTANTS OF RH. MELILOTI, RESISTANT TO STREPTOMYCIN, WERE ACTIVE AND 4 MUTANTS SURPASSED THE PARENT STRAIN BY THEIR ACTIVITY. NO AUXOTROPHIC MUTANTS OF RH. MELILOTI L-1 COULD BE OBTAINED BY MEANS OF UV, NMU, HNO SUB2 AND ETHYLENEIMINE. A RAPID QUANTITATIVE ACCOUNT OF VARIOUS NODULE BACTERIAL STRAINS IN A NODULE WAS SHOWN TO BE POSSIBLE USING THE LABEL OF RESISTANCE TO ANTIBIOTICS AND THE METHOD OF REPLICA PLATING. THIS IS ESSENTIAL FOR DIFFERENTIATION BETWEEN CULTURED AND WILD STRAINS, FOR STEP WISE SELECTION UNDER NATURAL CONDITIONS AND FOR COMPARISON OF STRAIN VIRULENCE.

UNCLASSIFIED

USSR

UDC 539.3

TRAPEZIN, I.I., ZASLAVSKIY, B.V., LOPOVOK, B.N.
and MIRONOV, A.I.

"Calculation of Local Stability of Three-Layer Corrugated Panel at
Normal and Elevated Temperatures"

Moscow, Prochnost' i Ustoychivost' Tonkostennykh Aviatsionnykh
Konstruktsiy, 1971, pp 250-266

Abstract: The subject panel consists of two skin plates with a
trapezoidal corrugated plate located between the two and plug
welded to them.

The local stability is calculated by the formula

$$\sigma_k = K \eta E \left(\frac{S}{l} \right)^2$$

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USSR

TRAPEZIN, I. I., et al., Prochnost' i Ustoychivost' Tonkostennykh
Aviatsionnykh Konstruktsiy, 1971, pp 250-266

where σ_K critical buckling stress
 K coefficient of end fixity given on figures 8 and 9
 η plasticity coefficient
 δ plate thickness
 l unsupported length of the plate

Experimental values of buckling stress versus $\frac{l}{\delta}$ for
temperatures 20 to 500°C are shown on graphs.

Tables of theoretical and experimental values of buckling
stress for different panel dimensions are also presented.

2/2

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USSR

UDC: 621.396.69:621.319.4(088.8)

MALYSHEV, G. T., LOPUKHIN, V. A.

"A Device for Automatically Checking Capacitance During Winding of Capacitors"

USSR Author's Certificate No 267757, filed 1 Jul 68, published 9 Jul 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V292 P)

Translation: This Author's Certificate introduces a device which contains measurement contacts, a bridge, a reference voltage source, a phase-shifting RC network, a cut-off module and a rejection module. As a distinguishing feature of the patent, a fixed section of metallized film is used as the resistance in the phase-shifting RC network which is connected in the reference voltage circuit of the phase-sensitive detector, and two phase-sensitive detectors are connected to the phase-shifting RC network.

1/1

USSR

UDC 621.375.126

VANKE, V.A., ZAYTSEV, A.A., KRYUKOV, S.P., LOPUKHIN, V.N. [Moscow State University]

"Problems Of Designing A Narrow-Band Tunable DC-Pumped Amplifier"

Izv.VUZ:Radiofizika, Vol XV, No 2, Feb 1972, pp 291-299

Abstract: The possibility is discussed of designing a narrow-band tunable amplifier-filter on the basis of a dipteron [diffron]. The scheme of this unit contains a ferromagnetic tip, an electron gun, an input distribution coupler, an amplification zone, an output distribution coupler, and a coupler. The dispersion characteristics of waves of the electron flow and delay system are presented. The advisability is shown of using a single-row comb as an input coupler of the amplifier. The parameters are numerically calculated. A graph is shown of the dispersion characteristics of a zero-order space harmonic and the distribution of high-frequency electrical fields of a single-row plane comb. The scheme is presented of an amplifier-filter with a combined delay system and one of the variants of such a system. The physical processes during interaction between the electron beam with a delay system and the dc-pumped field are considered. Numerical estimates are given. 5 fig. 9 ref. Received by editors, 26 Apr 1971.

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- 3 -

USSR

UDC 621.375.126

VANKE, V. A., ZAYTSEV, A. A., KRYUKOV, S. P., ~~LOPUKHIN, V. M.~~, Moscow State University

"Problems of Designing a Narrow Band Tunable Electrostatic Amplifier"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 2, 1972, pp 291-299

Abstract: The possibility of building a narrow band tunable filter amplifier based on a diffron was analyzed. The expediency of using a single-row comb as the input and output couplers of the amplifier was demonstrated, and numerical calculations of the parameters were performed. A study was made of the physical processes in the presence of combined interaction of an electron flux with a decelerating system and an electrostatic pumping field. The possibility of partial or complete combination of individual sections of the amplifier into a single system was demonstrated, and numerical estimates are presented. The pass band of the investigated amplifier with a single combined system for $\lambda = 8$ cm, $\Delta f \approx 120$ megahertz with a separate input coupler was 60 megahertz. The ordinary filter amplifier with separate input and output couplers has a band of $\Delta f \approx 40$ megahertz.

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USSR

UDC 621.385.624.001.5

BURNEYKA, K. P., GOLOVANOVA, V. V., VASIL'YEV, YE. I., KANAVETS, V. I.,
LOPUKHIN, V. M.

"Bunching Quality Index and Electronic Efficiency of a Quadrupole-Resonator
Klystron"

Moscow, Radiotekhnika i Elektronika, Vol XVI, No 4, 1971, pp 561-564

Abstract: The processes in a quadrupole-resonator klystron with a beam of given perveance are calculated considering the effect of coulomb forces and the return movement of electrons in the output resonator. Approximation of the given field and the one-dimensional disc model of the beam were used. The correspondence between the magnitude of the bunching quality index and the electron efficiency is investigated. When studying the relations between the bunching quality index and the electron efficiency it is necessary to consider the optimizing effect of the space charge on the processes of formation of the cluster and power take-off. In the example of a four-resonator klystron it is demonstrated that when selecting the optimal parameters of the buncher and output resonator the value of the bunching quality index and the electron efficiency approximately coincide. For nonoptimal parameters of the buncher the electron efficiency can be larger than the bunching quality index. The two variables are plotted according to
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USSR

BURNEYKA, K. P., et al., Radiotekhnika i Elektronika, Vol XVI, No 4, 1971,
pp 561-564

calculated values as a function of a variety of parameters: voltage on the next
to the last resonator, width of the output gap for various amplitudes of the
high-frequency field in the gap with optimal phase, for various phases with op-
timal amplitude, and for optimal phase and amplitude.

2/2

99

USSR

UDC 621.385.6

LOPUKHIN, V. M., MITSSENKO, B. K., ROSHAL', A. S.

"Theory of a Two-Frequency Coupling with a Fast Cyclotron Electron Wave"

Kiev, Izvestiya vuzov SSSR, Radioelektronika, Vol XV, No 8, 1972, pp 1015-1021

Abstract: A foundation is laid for the equivalent diagram of a two-frequency input resonator of a coupling with a fast cyclotron electron wave. One of the types of oscillations is used to decrease the noise of the fast cyclotron wave on the open-circuit frequency to the temperature of a load cooled by liquid nitrogen. The results of the calculations performed by computer using the equivalent diagram obtained show that the investigated input device permits a single-channel noise coefficient to be obtained for the electron beam parametric amplifier $F = 1.5$. The relation is presented for the frequency separation of the two types of oscillations as a function of the relation of the beam and resonator parameters. In the calculated case the band width is reduced by four times by comparison with the usual electron beam parametric amplifier having a noise factor $F \leq 1.5$. At the $F < 1.7$ level the band is cut in half by comparison with the uncooled electron beam parametric amplifier.

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USSR

UDC: 621.385.6

VASIL'YEV, Ye. I., KANAVETS, V. I., and LOPUKHIN, V. M.

"Electronic Conductivity and Efficiency of a Klystron Resonator"

Kiev, Izvestiya VUZ SSSR--Radioelektronika, No 9, 1972, pp 1146-1153

Abstract: Complaining that insufficient attention has been devoted by the literature to the question of frequency characteristics, the authors develop in this paper a method for determining the electronic conductivity and frequency characteristics of an output klystron resonator and present some of the results of their analysis. In their computations, they consider the effect of the Coulomb forces and the inverse motion of the electrons. The computation of the electronic conductivity is made for rectangular current bunchings at the resonator input, the duration of the bunchings being equal to one-fourth and one-eighth the oscillation period. Such bunchings can be obtained in optimized bunchers of multi-resonant klystrons. The method developed by the authors permits nonlinear computation of the conductivity components, and indicates that optimal modes of resonator operation are possible when the resonators have ordinary Q and wave resistance values.

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LOPUKHIN, Yu.

MEDICINE

28 May 71

20

PROBATION SCIENCE

IV CRITICISM AND COMMENTARY

17. USM

Journal, Yu. G. Gerasimov, Member of USSR Academy of Medical Sciences, Editor of the Second Moscow Medical Institute

"Creative Potential of the Higher Educational Institution"

Moscow, Prava, 17 Feb 71, p. 2

Translation: The tasks advanced for science in the draft of the Directives on the new Five-Year Plan demand that every scientific worker collectively define its place in the general struggle to accelerate the rate of scientific research and progress.

Experience shows that it is impossible to teach creative thinking and formulate professional activity in future generations without preparing them. The training of scientists at higher educational institutions also has its independent significance in the development of science overall. It is the creative potential of the higher educational institution being fully utilized today that reserves are there in science at higher educational institutions.

I will begin with figures. In the last three years at the Second Moscow Medical Institute, ten new professor laboratories have been established, and more than three hundred new research projects have been initiated.

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LOPUKHIN, Yu., Prava, 17 Feb 71, p. 2

million rubles worth of modern instruments and apparatus has been purchased. More than 80 doctors of medical sciences, about 200 candidates of sciences, and more than 300 senior and junior scientific associates are working at the Institute.

The level of contemporary science demands that there be comprehensive research in solving many scientific problems.

New capabilities have enriched the broad range of research and helped to achieve significant scientific results. Nonetheless, it is clear to everyone that a great deal more could be done. In our opinion, the efficiency of scientific work by higher educational institutions is inadequate due to errors in planning research and deficiencies in the forms and methods of planning and financial allocation actively at higher educational institutions.

According to an old tradition, planning for scientific work is carried on within the framework of individual chairs, and the research itself is generally done by the methods and ways accepted in the particular chair, morphological, biochemical, clinical, etc. It is, of course, possible to discuss particular aspects of a problem and receive certain new facts, which are frequently of definite significance, by

LOPUKHIN, Yu. M.

*UPR 54767
22 DEC 1971*

DIRECTIONS OF DEVELOPMENT OF RESEARCH (TARGET TREE) ON THE PROBLEM OF ORGAN AND TISSUE TRANSPLANTATION

UDC: 612.6.02:001

Article by Yu. M. Lopukhin, R.V. Petrov, Second Moscow Medical Institute named N.I. Pirogov, Moscow, Meditsinskii Nauchnyi Zhurnal, Moscow, No 11, 1971, pp. 11-13

Organ and tissue transplantation is one of the rapidly developing branches of modern medical and biological science. With each year an increasing number of immunologists, biologists, surgeons, experimenters, pharmacologists, and geneticists is being drawn to develop the diverse problems dealing with this complex subject. There is an ever increasing amount of scientific information about the transplantation problem and an annual increase in number of scientific laboratories and clinical centers, both in our country and abroad, dealing with theoretical and clinical aspects of this problem. A special Institute of Organ and Tissue Transplantation has been organized in the USSR Academy of Medical Sciences.

In this situation an urgent need has arisen to coordinate, rationally substantiated approach to distribution of material resources in accordance with the most important directions of scientific research holding the promise of the greatest effect and with a high coefficient of "mutual usefulness."

For expressly this purpose, an effort was made to prepare an All-Union program of scientific research on organ and tissue transplantation, called upon to become an instrument of the problem commission in work pertaining to coordination and stimulation of scientific research in our country.

When preparing a major scientific program there are six main prerequisites: 1) distinct formulation of the target and chief aspects whose interrelation result in reaching it; 2) determination of the key issues of each aspect on the solution of which the general success relies the most; 3) clear-cut illustration of distribution of scientific forces at a given time; 4) a supply of key problems with demonstration of elements not taken care of; 5) possibility of bringing any item on the program up to the level of concrete subjects; 6) the program as a whole should be as clear and graphic as a topographic map; 6) in spite of being interrelated, each element in the

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EXPERIMENTAL ACUTE HEPATIC INSUFFICIENCY IN DOGS -U-

AUTHOR--(05)--LOPUKHIN, YU.M., DUBROVSKIY, A.K., KUZNETSOV, V.N., KREMLI,
S.M., KHOVANSKAYA, M.G.
COUNTRY OF INFO--USSR L

SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZIOLOGIYA, 1970, NR 3, PP
25-29

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DOG, LIVER FUNCTION, CARBON TETRACHLORIDE, BLOOD CHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1897

STEP NO--UR/0481/70/000/003/0025/0029

CIRC ACCESSION NO---AP0129249

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129249

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN VIEW OF THE FACT THAT UP TO THE PRESENT TIME THERE EXISTS NO SATISFACTORY METHOD OF INDUCING HEPATIC COMA THE AUTHORS CARRIED OUT THREE PRINCIPAL SERIES OF EXPERIMENTS: 1. DEVASCULARIZATION OF THE LIVER WITH PRELIMINARY ESTABLISHMENT OF PORTOCAVAL ANASTOMOSIS. 2. INJECTION OF HEPATOTROPIC POISON (CARBON TETRACHLORIDE) INTO THE BLOOD CHANNEL. 3. LIGATION OF THE HEPATIC ARTERY, BILE DUCTS WITH INTRODUCTION INTO THEM OF CARBON TETRACHLORIDE. EXPERIMENTS WERE CONDUCTED 47 MONGREL DOGS UNDER MORPHINE HEXANAL ANESTHESIA. THE DEVELOPMENT OF HEPATIC INSUFFICIENCY WAS EVALUATED BY THE CLINICAL COURSE, BIOCHEMICAL INDICES OF THE BLOOD (AMMONIUM, UREA, SUGAR, BILIRUBIN, LACTIC ACID) AND MORPHOLOGICAL STUDY OF THE LIVER. THE AUTHORS ARRIVED AT THE CONCLUSION THAT THE MOST COMPLETE SYMPTOM COMPLEX OF ACUTE HEPATIC INSUFFICIENCY IN DOGS WAS OBTAINED ONLY IN THE THIRD SERIES. AMMONIUM TOWARDS THE 3RD-5TH DAY INCREASED UP TO 1.8 PLUS OR MINUS 0.13 MGPERCENT (P SMALLER THAN 0.02); UREA DECREASED DOWN TO 19.0 PLUS OR MINUS 0.73 (P SMALLER THAN 0.02); BILIRUBIN UP TO 2.4 PLUS OR MINUS 0.003 (P SMALLER THAN 0.001); LACTIC ACID INCREASED UP TO 57.0 PLUS OR MINUS 0.001; SUBSEQUENTLY THE BIOCHEMICAL INDICES STEADILY DETERIORATED. THE CLINICAL PICTURE AND SEVERE MORPHOLOGICAL AFFECTION OF THE LIVER SUPPLEMENTED THE BIOCHEMICAL INDICES OF THE BLOOD. THIS MODEL OF ACUTE HEPATIC INSUFFICIENCY ENABLES TO STUDY THE FUNCTIONAL ACTIVITY OF ISOLATED HOMO OR HETEROLIVER. FACILITY: LABORATORIYA PERESADKI ORGANOV TSENTRAL'NOY NAUCHNO-ISSLED. LABORATORII II MOSKOVSKOGO MEDITSINSKOGO INSTITUTA IM. N. I. PIRUGOVA.

UNCLASSIFIED

LOPUKHIN, Yu.

Medicine

WHAT GRADUATE STUDY SHOULD BE LIKE

Article by Yu. Lopukhin, Academician of the USSR Academy of Medical Sciences, Meditsinskaya Gazeta, Moscow, 31 May 1972, # 31

Recently our newspaper (No 3135, 14 May 1972) carried an article by Professor K. Petrovsky. That should be a dissertation topic. The article touched upon the problem of training scientists, and sharply posed the question about the necessity of improving the quality of candidate and doctoral dissertations. Today we continue the discussion of this topic.

Among the problems of higher medical education, the training of scientific-pedagogical cadres is becoming one of the most acute. Graduate study as a method of mastering their training was organized in the USSR eleven years later, at first in the theoretical departments, and beginning in 1968, in the clinical departments as well.

In the light of the continual growth in the network of higher institutions of learning, including medical institutions, graduate study as a whole has completely justified itself. In that connection, the "norms" of training candidates of science (it was nearly in that respect that a start was made in examining the basic role of graduate study), the relative accessibility and simplicity of carrying out candidate dissertations, frequently to the detriment of specialist training quality, inevitably led to this alarming situation: the significance of many dissertations ceased to correspond to the contemporary level of development of biology and medicine.

Frequently, superficially trained specialists and scientists, in occupying supervisory positions at various departments and scientific-research institutions, have been carrying out equally superficial research which is formulated into doctoral dissertations and poorly prepare the trained graduate students.

1/3 014 UNCLASSIFIED PROCESSING DATE--15NOV70
TITLE--SITUATION WITH TAENIARHYNCHOSIS, HOOKWORM DISEASES AND ASCARIDIASIS
IN TRANSCAUCASIAN REPUBLICS AND MEASURES NECESSARY FOR ERADICATION AND
AUTHOR--(05)--POPOV, V.F., SHULMAN, YE.S., PROKOPENKO, L.I., ABRAMOVA, E.G.,
LOPUKHINA, N.G.
COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA PARAZITOLOGIYA I PARAZITARNYYE BOLENI, 1970, VOL
39, NR 2, PP 180-188
DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DISEASE CONTROL, PARASITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/1419

STEP NO--UR/0358/70/039/002/0130/0108

CIRC ACCESSION NO--AP0109481

UNCLASSIFIED

2/3 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0109481
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE DECREE OF THE USSR MINISTRY OF PUBLIC HEALTH NO. 230 OF MARCH 20, 1967 PROVIDES FOR A NUMBER OF MEASURES FOR INCREASING THE PACE OF ERADICATION AND REDUCTION OF INCIDENCE OF A NUMBER OF INFECTIOUS AND PARASITIC DISEASES IN THE SOVIET UNION. FROM YEAR TO YEAR THE RANGE OF EXAMINATIONS OF THE POPULATION FOR DETECTION OF HELMINTHIC DISEASES INCREASES IN THIS COUNTRY. THE AMOUNT OF WORK DONE FOR CONTROL OF HELMINTHIC DISEASES HAS INCREASED SIGNIFICANTLY IN REPUBLICS OF THE TRANSCAUCASUS WHICH, ALONGSIDE WITH INCREASING OF MATERIAL WELFARE OF THE PEOPLE, IMPROVEMENT OF THEIR SANITARY CULTURE, CONTINUOUSLY IMPROVING SANITARY CONDITIONS OF INHABITED AREAS RESULTED IN 1967 IN 2.1 FOLD REDUCTION IN THE INCIDENCE OF HELMINTHIC DISEASES IN THE POPULATION OF THE AZERBAIJAN AND THE ARMENIAN SSR, AND 2.8 FOLD REDUCTION IN THE GEORGIAN SSR AS COMPARED WITH THE LEVEL OF INCIDENCE IN 1950. EVEN THOUGH AS A RESULT OF MUCH WORK DONE IN SANITATION OF THE POPULATION FROM TAENIARHYNCHOSIS AND ASCARDIASIS THE INCIDENCE OF THESE HELMINTHIC DISEASES HAS BEEN REDUCED SEVERAL TIMES, IT IS STILL MUCH HIGHER THAN THE AVERAGE INDEX FOR THE SOVIET UNION. THE INCIDENCE OF HOOKWORM DISEASES IN THE POPULATION OF THE AZERBAIJAN SSR AND PARTICULARLY OF THE GEORGIAN SSR IN 1967 ALSO REDUCED SEVERAL TIMES AS COMPARED WITH THAT IN 1950, BUT ERADICATION OF THIS HELMINTHIC DISEASE REQUIRES STILL MUCH WORK TO BE DONE.

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UNCLASSIFIED

PROCESSING DATE—13NOV70

CIRC ACCESSION NO--AP0109481

ABSTRACT/EXTRACT—THE MAIN CONDITIONS FOR ERADICATION AND REDUCTION OF THE INCIDENCE OF HELMINTHIC DISEASES IN THE TRANSCAUCASIAN REPUBLICS INCLUDE, FIRST OF ALL, IMPROVEMENT IN THE ORGANIZATION OF HELMINTHIC DISEASE CONTROL MEASURES WITH ENLISTING OF COOPERATION OF THE GENERAL MEDICAL NETWORK, IMPROVEMENT IN THE GUIDANCE OF THIS WORK ON THE PART OF PUBLIC HEALTH MINISTRIES AND CHIEF PHYSICIANS OF DISTRICTS, DETECTION AND SANITATION OF ALL PATIENTS WITH TAENIARHYNCHOSIS, PARTICULARLY AMONG CATTLE BREEDERS, INTRODUCTION OF LABELLING AND VITAL DIAGNOSIS OF MEASLES IN CATTLE IMPROVEMENT OF VETERINARY AND SANITARY CONTROL IN PLACES OF CATTLE SLAUGHTER, MARKED IMPROVEMENT IN THE SANITARY CONDITIONS OF VILLAGES AND CATTLE BREEDING FARMS, IMPROVEMENT OF SANITARY EDUCATION OF THE POPULATION, DETECTION AND SANITATION OF ALL MICROFOCI OF HOOKWORM DISEASES, SANITATION OF MICROFOCI OF ASCARIDIASIS PARTICULARLY IN INTENSIVE FOCI. FACILITY: GLAVNOYE SANITARNO-EPIDEMIOLOGICHESKOYE UPRAVLENIYE MINISTERSTVA ZDRAVOOKHRANENIYA SSSR. FACILITY: INSTITUT MEDITSINSKOY PARAZITOLOGII I TROPICHESKOY MEDITSINY IM. YE. I. MARTINOVSKOGO MINISTERSTVA ZDRAVOOKHRANENIYA SSR, MOSCOW.

UNCLASSIFIED

acc. Nr.: **AP0029502**

Ref. Code: UR 0391

PRIMARY SOURCE: Gigiyena Truda i Professional'nyye Zabolevaniya,
1970, Nr 1, pp 3/-34

WORK CONDITIONS AND THE STATE OF HEALTH OF WORKERS ENGAGED
IN HOT VULCANIZATION OF FOOTWEAR RUBBER

Z. A. Volkova, L. Ye. Milkov, K. A. Lopukhova, L. M. Malyar, Yu. L. Makarenko,
T. K. Shakhova

Summary

Hot vulcanization (cure) of rubber with divinyl-styrene raw rubber serving as a base is attended by the formation of a complex steam and gas mixture. In this process permanent constituents are styrene fumes, whose content in the respiration zone comprises 2—40 mg/m³. Into the atmosphere there are also released divinyl, butyric aerosol, formaldehyde, acrolein, carbon monoxide, sulfurdioxide, ammonia, methyl alcohol, aromatic amines. Heat-producing microclimate is an adverse factor as well. The workers demonstrated functional shifts in the state of the nervous system, alterations in the upper respiratory tract, peripheral blood and teguments. Medico-prophylactic measures are proposed.

REEL/FRAME

19681103

1/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--MECHANISM OF ANTIPHLOGISTIC PROPERTIES COMMON TO SOME C SUB4
SUBSTITUTED ACYL AMINOPYRAZOLONES -U-
AUTHOR--(05)-PRISHCHEP, T.P., LAVRENTIYEVA, L.N., LOPUKHOVA, V.V.,
CHERNOVA, N.A., CHERDYNTSEV, S.G.
COUNTRY OF INFO--USSR
SOURCE--FARMAKOL. TOKSIKOL. (MOSCOW) 1970, 33(1), 78-81
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ANTIINFLAMMATORY DRUG, AMINE DERIVATIVE, ORGANIC AZOLE
COMPOUND, LESION, ALKALOID, SKIN PHYSIOLOGY, ABSORPTION, THYROID GLAND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0090 STEP NO--UR/0390/70/033/001/0078/0081
CIRC ACCESSION NO--AP0119086
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119086

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STEARIC ACID ANTIPYRILAMIDE AND 3,5,DINITROBENZOIC ACID ANTIPYRILAMIDE INCREASED THE RATE OF RESORPTION OF STRYCHNINE NITRATE INTRODUCED TO MICE ON THE SURFACE OF A 24 HR TURPENTINE ABSCESS. BUTADIONE N,METHYL,N,ANTIPYRILAMIDE AND P,AMINOBENZOIC ACID N,METHYL,N,ANTIPYRILAMIDE INHIBITED WHILE STEARIC ACID ANTIPYRILAMIDE INCREASED FUNCTIONING OF THE THYROID GLAND. THE ANTIPHLOGISTIC EFFECT OF THE AMINOPYRAZOLONE ACYL DERIVS. SEEMS TO REQUIRE A NORMAL FUNCTIONING OF THE THYROID GLAND. FACILITY: TOMSK: MED. INST., TOMSK, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EFFECT OF INDIFFERENT ELECTROLYTES ON THE ELECTRODE PROCESS -U-
AUTHOR-(03)-LOPUSHANSKAYA, A.I., PAMFILOV, A.V., MAKOVEY, G.L.
COUNTRY OF INFO--USSR
SOURCE--ELEKTROKHIMIYA 1970, 6(2), 193-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ELECTRODE PROCESS, ELECTROLYTE, MANGANESE CHLORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/1153 STEP NO--UR/0364/70/006/002/0193/0195
CIRC ACCESSION NO--AP0121712
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121712

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF INERT COMPONENTS IN THE SYSTEM ON THE ELECTRODE PROCESSES IS CONSIDERED. THE VALUE OF THE STEADY STATE CURRENT DECREASES IN THE SERIES OF THE RATIOS OF THE CHARGES OF THE SUPPORTING ELECTROLYTE IONS: 3:1 GREATER THAN 3:2 GREATER THAN 2:1 GREATER THAN 1:1 GREATER THAN 2:2 GREATER THAN 1:2. THE CONCN. OF THE SUPPORTING ELECTROLYTE ALSO AFFECTS THE CURRENT, TENDING TO DECREASE IT AS THE CONCN. IS INCREASED, EXCEPT FOR MNCL SUB2 FOR WHICH THE CURRENT INCREASES WITH INCREASING CONCN. FACILITY: CHERNOVITS. GOS. UNIV., CHERNOVTSY, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--SYNTHESIS AND ANTIMICROBIAL ACTIVITY OF AMMONIUM DERIVATIVES OF
CYCLOHEXANE -U-
AUTHOR--(04)-UDOVITSKAYA, V.V., LOPUSHANSKIY, A.I., PALIV, G.K., BURDENYUK,
I.P.
COUNTRY OF INFO--USSR
SOURCE--KHIM.-FARM. ZH. 1970, 4(1), 17-20
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BACTERIOSTASIS, AMMONIUM COMPOUND, CYCLOHEXANE, CHEMICAL
SYNTHESIS, STAPHYLOCOCCUS AUREUS, ESCHERICHIA COLI
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1993/0313 STEP NO--UR/0450/70/004/001/0017/0020
CIRC ACCESSION NO--AP0113242
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0113242

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HALOACETATES (IA) OF SUBSTITUTED CYCLOHEXANOLS, XCH SUB2 CO SUB2 R, WERE PREPD. BY THE METHOD OF CONRAD (1877) AS FOLLOWS (R, X, B.P.-MM, PERCENT YIELD, N PRIME20 SUBD, AND D PRIME20 REPORTED): (SHOWN ON MICROFICHE). ALL THE QUATERNARY SALTS PREPD. WERE TESTED IN VITRO AGAINST STAPHYLOCOCCUS AUREUS AND ESCHERICHIA COLI. FACILITY: CHERNOVITS. MED. INST., CHERNOVTSY, USSR.

UNCLASSIFIED

USSR

UDC: 632.95

~~LOPYREV, V. A.~~ VERESHCHAGINA, T. N., KONONENKO, G. G., MAKARSKIY, V. V.,
KRUPIN, K. L., Leningrad Technological Institute of the Paper and Cellulose
Industry and Northwest Polytechnical Correspondence Institute

"A Method of Synthesizing 3-(5-Amino-1,2,4-triazolyl)-alkanoic Acids"

USSR Author's Certificate No 320496, filed 25 Dec 69, published 2 Feb 72
(from RZh-Khimiya, No 15, Aug 72, Abstract No 15N:75P)

Translation: A method is proposed for synthesizing 3-(5-amino-1,2,4-triazolyl)-
alkanoic acids (I) by reacting a dibasic aliphatic carboxylic acid with
aminoguanidine salts. An effective and low-toxicity pesticide may be derived
from compound I. Twenty three and eight tenths grams of aminoguanidine
bicarbonate is gradually added to a solution of 20.8 grams of $\text{CH}_2(\text{COOH})_2$ in
200 ml of water at a temperature of 50-60°C, boiled for 6 hours, a solution of
10 grams of NaOH in 50 ml of water is added, boiled for 1 hour, evaporated to
50 ml, cooled, acidified with 10% HCl (acid) to a pH of about 3, the 3-(5-
amino-1,2,4-triazolyl) acetic acid is filtered off; yield 60%, melting point
186-7°C (dissociation, water). 3-(5-Amino-1,2,4-triazolyl) propionic acid is
also synthesized; yield 71%, melting point 184-5°C (dissociation, water).

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1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70/
TITLE--VULCANIZATION OF SATURATED FLUORINE CONTAINING RUBBERS -U-

AUTHOR--(05)--LUNDSTROM, A.M., GRINBLAT, M.P., FOMICHEVA, N.M., LOPYREV,
V.A., NETSETSKAYA, O.A.
COUNTRY OF INFO--USSR

SOURCE--USSR 263,132
REFERENCE--UTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--04FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--VULCANIZATION, SYNTHETIC RUBBER, FLUORINATED ORGANIC COMPOUND,
CHEMICAL RESISTANCE, AMINE, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1461

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128860

UNCLASSIFIED

2/2 017
CIRC ACCESSION NO--AA0128860

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SATD. F CONTG RUBBERS ARE
VULCANIZED BY AMINES AND CONVENTIONALLY USED INGREDIENTS. TO IMPROVE
THE CHEM. RESISTANCE OF THE VULCANIZATES, COMPS. OF THE FORMULA I,
WHERE N IS 0-8, OR THEIR COMBINATIONS IN CONCNS. OF 1-10PERCENT BY WT.
OF THE POLYMER ARE USED AS AMINES.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--REACTIONS OF PERFLUORO ACID HYDRAZIDES. II. REACTION OF PERFLUORO
ACID HYDRAZIDES WITH CHLORINE -U-
AUTHOR--(04)--SIDOROVA, L.P., TUMANOVA, A.V., GRINBLAT, M.P., LOPYREV, V.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(4), 705-6
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CARBOXYLIC ACID CHLORIDE, FLUORIDE, AZIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/2155
CIRC ACCESSION NO--AP0125738
STEP NO--UR/0366/70/006/006/0705/0706
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--300CT70

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CIRC ACCESSION NO--AP0125738

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PASSAGE OF DRY CL THROUGH CF
SUB3 CONHNH SUB2 IN MENO SUB2 GAVE CF SUB3 COCL, HCL, AND N. SIMILARLY,
CF SUB3 CF SUB2 CONHNH SUB2, CF SUB3 CF SUB2 CF SUB2 CONHNH SUB2, AND H
SUB2 NNHOC(CF SUB2) SUB3 CONHNH SUB2 REACTED TO GIVE THE CORRESPONDING
ACID CHLORIDES. FACILITY: LENINGRAD. TEKHNOL. INST.
TSELYUL.-BUM. PROM., LENINGRAD, USSR.

UNCLASSIFIED

USSR

GUSEVA, L. N., and LORAN, I. D., Klinicheskaya Meditsina, Vol 49, No 4,
Apr 71, PP 113-116

was sufficiently constant from institute to institute and also in relation to the year of production over the period 1966-1969. The titer of antiviral antibodies in gamma-globulin obtained on vaccination of donors with smallpox vaccine was 2-4 times higher than that of placental gamma-globulin; hence, the dose of the placental gamma-globulin must be three times higher than that of donor gamma-globulin.

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USSR

LORANSKIY, D., Deputy Chief Sanitary Doctor of the USSR, GORBOV, V., Doctor of Medical Sciences, and STEPANOVA, L., Senior Inspector, Main Sanitary and Epidemiological Administration, USSR Ministry of Health

"Protecting the Soil Against Contamination"

Moscow, Meditsinskaya Gazeta, 24 Dec 71, p 2

Abstract: In recent times there has been an increase, which is expected to continue, in the use of sewage from small cities and communities for purposes of irrigation, with purification occurring through soil processes. Worries have been expressed concerning this because disease pathogens might reach human beings (either through food or directly with farm workers) as a result, and some types and quantities of pollutants may destroy the biological community in the soil which would normally purify waste water. Under correct conditions, however, this method of handling sewage can be advantageous. Work is now being completed on drafts of new rules for the use of such water to irrigate agricultural fields and for maintaining preventive and current surveillance over such practices. A major question is the location of such fields, and the new draft specifies that they must be from 150-1,000 meters away from residential, children's, or medical facilities, and doctors may

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USSR

LORANSKIY, D. , et al., Meditsinskaya Gazeta, 24 Dec 71, p 2

increase this 1.5-2-fold if necessary. If the sprinkling method is used, a minimum distance of 1,000 meters must be observed, and helminths must be removed from the water. Settling ponds are essential for this method of sewage disposal, but they must have trees and bushes planted thickly around to prevent the spread of Culex mosquitoes. The new draft provides that food crops will not be grown on such irrigated fields, which is not a large setback since perennial grasses, feeds, and industrial crops grow best anyway. Under the new rules, it will require a special permit to use industrial runoff for irrigation purposes, and this permit must be based on careful scientific investigation.

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USSR

UDC 613.5+614.377:678.7

LORANSKIY, D. N., and SHAKLEINA, YE. M., Ministry of Health USSR
"Sanitary Control of the Use of Polymer Materials in the Construction
of Residential and Public Buildings"

Moscow, Gigyena i Sanitariya, No 1, 1970, pp 75-78

Abstract: Growing awareness of the health dangers posed by the release of injurious volatile substances from various kinds of paints and varnishes, linoleums, plastics, heat and sound insulation materials, and other products made from polymers prompted the Ministry of Health USSR, together with other government agencies, to take a number of steps in 1964 to broaden toxicological research and set standards for the use of these products. Perhaps the most important action was the establishment of the All-Union Research Institute of Hygiene and Toxicology of Pesticides, Polymers, and Plastics. The purpose of this institute is to engage in original research and to coordinate and guide the activities of relevant organizations throughout the country. Over 150 different products were evaluated by 1968, and the results were incorporated in the official List No 743-68 of Polymer Materials That May or May Not Be Used in the Construction of Residential and Public Buildings (issued in 1968).

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Biophysics

USSR

SUSLOVA, T. B., OLENEV, V. I., LORCHAGINA, M. V., and VLADIMIROV, Yu. A.,
Second Moscow Medical Institute imeni N. I. Pirogov

"Chemiluminescence Associated with the Formation of Lipid Peroxides in
Biological Membranes. IV. Role of the Change in Iron Valence in These Processes"

Moscow, Biofizika, Vol 15, No 4, Jul/Aug 70, pp 622-628

Abstract: In earlier studies it was shown that a suspension of mitochondria in the presence of iron ions develops luminescence as a result of the peroxidation of lipids. Experiments are described which indicate that mitochondria in suspension accumulate and partly reduce FeCl_3 or a complex of $\text{Fe}^{3+} + \text{ADP}$ when added to an incubation mixture. Catalytic agents (ortho- and pyrophosphates) increased the latent period and intensity of luminescence of the suspensions by accelerating the oxidation of Fe^{2+} with air. In the absence of phosphates, oxygen was utilized very slowly. The systems that reduce the oxidize iron, e.g., phosphates, probably also regulate the processes of peroxide oxidation of lipids in cells.

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UDC 519.21

USSR

LORENS, C. S.

"Factorization of Rational Matrices for Multidimensional Random Processes"

Tr. III Mezhdunar. Kongressa Mezhdunar. Federatsii po Avtomat. Upr., 1966.
Optimal'n. Sistemy. Stat. Metody [Works of Third International Congress of
International Federation on Automatic Control, 1966, Optimal Systems, Statis-
tical Methods], Moscow, Nauka Press, 1971, pp 233-243, (Translated from
Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V118 by the author).

Translation: Methods are presented for symmetrical and asymmetrical factoriza-
tion of rational matrices in an arbitrary field, where analytic limitations are
placed on the factors. The optimal filter, providing the minimum mean square
error in terms of the LaPlace transform is expressed through the mutual spectral
density between the input of the filter and the desired output, while sufficient
factorization of the spectral density of the input signal contains matrices
having no poles in the right half space of the complex variable.

Asymmetrical factorization is based on the search for the least common mul-
tiple of the denominators of the columns in the spectral density matrix of the
input signal. Symmetrical factorization is based on construction of a polynomial
matrix and the use of two algorithms for conversion of the input signal spectral
density matrix to a matrix which is the inverse of the polynomial matrix.

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UDC 577.4

USSR

LORENTS. A. A.

"Elements of Constructive Probabilistic Automata Theory"

Elementy konstruktivnoy teorii veroyatnostnykh avtomatov (cf. English above)
Riga, Zinatne, 1972, 236 pp. ill., 97 kopecks (from RZh-Matematika, No 3,
Mar 73, Abstract No 3V410K)

Translation: Questions in probabilistic automata theory are analyzed from the viewpoint of the constructive school of mathematics. A small section on constructive probability and set theory is presented, and problems in the stability and economy of probabilistic automata states are investigated. A description is given of various methods of structural synthesis of probabilistic automata and probability distribution generators.

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USSR

LORENTS, A. A.

"Elements and Design Theory of Probabilistic Automata"

Elementy Konstruktivnoy Teorii Veroyatnostnykh Avtomatov [English Version Above], Riga, Zinatne Press, 1972, 236 pages (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V410 K).

Translation: Problems from the theory of probabilistic automata are studied from the standpoint of the constructive trend in mathematics. A small area in the constructive theory of probabilities and sets is outlined, problems of stability and economy of states of probabilistic automata are studied.

USSR

UDC 591.1478

LORENTS, O. G., and KRUGLYAK, L. N.

"Concentration of Thyroglobulin and Proteolytic Activity Changes in Thyroid Gland Tissue of Animals Under Hypoxia Conditions"

Dushanbe, Doklady Akademii Nauk Tadzhikskoy SSR, Vol 15, No 2, 1972, pp 62-64

Abstract: In order to clarify the effect of oxygen deficiency on the thyroglobulin concentration in the colloid within the thyroid follicles, experiments were carried out with rats in a chamber, the pressure in which was simulated to be equal to that at a 6 km elevation. Rats were kept at this pressure for 18 hours/day, from 1 to 14 consecutive days. The amount of thyroglobulin in the thyroid tissue was determined from the precipitation reaction of the thyroid extract diluted to 1:2-1:128 with antithyroid phytoprecipitin in agar gel. Concentration of thyroglobulin was judged from titers, i.e., from a maximal dilution of the thyroid extracts which would still react with phytoprecipitin. Proteolytic activity was established from the decomposition rate of hemoglobin which was used as a substrate for the thyroid extract. This activity was expressed in the amount of tyrosine in thyroid gland, which was determined colometrically. Experimental data showed that the thyroglobulin titer changed from 1:16-1:32 (control) to 1:48, 1:64, and 1:80 for rats kept in the pressure chamber for one week. These titers remained at the same

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USSR

LORENTS, O. G., and KRUGLYAK, L. N., Doklady Akademii Nauk Tadzhikskoy SSR, Vol 15, No 2, 1972, pp 62-64

level for rats kept in the chamber for 2 weeks. Titers of rats kept in the pressure chamber for less than one week did not differ from those of control animals. With respect to proteolytic activity, the experimental rats subjected to hypoxia produced an average of 198 micrograms of tyrosine during 4 hours of thyroid tissue incubation, as opposed to 313 micrograms for control animals. The obtained results indicated that hypoxia increased the production of thyroglobulin due to the inhibition of the proteolytic activity of the thyroid gland. This indicates that an animal organism requires less thyroid hormones in the presence of an oxygen deficiency. The production of these hormones does not decrease under hypoxia conditions but their release into the blood stream decreases, and this is one of the mechanisms which facilitates survival of animals with an insufficient oxygen supply.

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USSR

UDC 491.1478

LORENTS, O. G., and KRUGLYAK, L. N., Tadzhik State Medical Institute imeni Abuali ibn-Sino

"Thyroid Response to Throtropin in Hypoxic Rats"

Dushanbe, Doklady Akademii Nauk Tadzhikskoy SSR, No 5, 1971, pp 62-64

Abstract: In rats given an extract of cattle thyrotropin in a dose equivalent to five pituitaries, hypoxia created in a pressure chamber increased the amount of absorbed oxygen by 36% above the baseline value 24 hours later. In the control animals (injected with the hormone but not exposed to hypoxia), the amount of absorbed oxygen increased by about the same amount (32%). Histologic examination of the microstructure of the thyroid in both the experimental and control animals revealed identical changes: marked vacuolization of the colloid and increased height of the epithelial cells. Thus, hypoxia neither potentiated nor weakened the effect of thyrotropin.

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1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ON THE POSSIBILITY OF SHORTENING OF THE OPTICAL SCHMIDT SYSTEM -U-
AUTHOR--LORETSYAN, ZH.M.
COUNTRY OF INFO--USSR
SOURCE--SOOBSHCHENIYA BYURAKANSKOY OBSERVATORII AKADEMIYA NAUK ARMYANSKOY
SSR, 1970, NR 41 PP 134-144
DATE PUBLISHED-----70
SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS, NAVIGATION
TOPIC TAGS--ASTROPHYSICS INSTRUMENT, OPTIC MIRROR, OPTIC INSTRUMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1477 STEP NO--UR/2620/70/000/041/0134/0144
CIRC ACCESSION NO--AP0123380

UNCLASSIFIED

2/2 018
CIRC ACCESSION NO--AP0123380

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY OF SHORTENING OF THE CLASSICAL SCHMIDT SYSTEM BY CHANGING OF THE FORM OF ITS MIRROR HAS BEEN INVESTIGATED. MANY TRIGONOMETRIC CALCULATIONS HAVE BEEN MADE IN ORDER TO INVESTIGATE THE QUALITIES OF NORMAL AND SHORTENED SYSTEMS. SYSTEMS WITH SPHERICAL, ELLIPSOIDAL AND FLATTENED SPHEROIDAL MIRRORS HAVE BEEN CONSIDERED. THE RESULTS OF THESE CALCULATIONS HAVE SHOWN: A) FOR A SHORTENED SYSTEM THE MIRROR SHOULD BE A FLATTENED SPHEROID. B) IN ORDER TO DIMINISH THE ABERRATIONS, THE SHORTENED SYSTEM SHOULD HAVE A SMALLER ANGULAR FIELD THAN A CLASSICAL SCHMIDT SYSTEM OF THE SAME LIGHT GATHERING POWER.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--STUDY OF THE EXCRETION OF PURINES AND URIC FROM URINE OF PATIENTS
SUFFERING FROM LEUKEMIA WITH VARIOUS CONTENT OF COBAMIDE COMPOUNDS IN
AUTHOR--(05)--MYASISHCHEVA, N.V., SHERMET, Z.I., LEVINA, G.D., LORIE,
YU.I., RAUSHENBAKH, M.O.
COUNTRY OF INFO--USSR
SOURCE--PROBL GEMATOL PERELIV KROVI 15(1), 36-43. 1970
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--LEUKEMIA, URINE, ORGANIC ACID, PURINE, EXCRETION, VITAMIN,
COBALT COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/0248 STEP NO--UR/9080/70/015/001/0036/0043
CIRC ACCESSION NO--AP0117500

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117500

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TOTAL OF 24 PERSONS WERE EXAMINED. IN THE PATIENTS WITH INCREASED LEVEL OF B SUB12 IN THE BLOOD NOT ONLY AN INTENSIFIED EXCRETION IN URIC ACID WAS SEEN, BUT ALSO AN INTENSIFIED EXCRETION OF PURINES AND OF THEIR METHYLATED DERIVATIVES.

FACILITY: INST. EXP. CLIN. ONCOL., ACAD. MED. SCI. USSR, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: None

ALIKHAN'YAN, A. I., BELYAKOV, E. S., GARIBYAN, G. N., LORIKYAN, M. P.,
MARKARYAN, K. Zh., and SHIKHLYAROV, K. K.

"Separation of Ultra-High-Energy Particles by the Radiation Transition Method"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, vol 16,
No 6, 20 September 1972, pp 315-318

Abstract: Detectors of transition radiation in the x-ray frequency range are widely used for identifying high-energy particles in cosmic rays and in large accelerators. This letter gives the results of experiments conducted on transitional radiation occurring in foam plastic of 0.04 g/cm^3 density with electron energies of 1-4.5 Gev, where it was shown that the use of the streamer chamber method with a foam plastic radiator permitted the separation of particles in the energy range of $\gamma = E/mc^2 > 10^3$ with high reliability. The equipment used for the measurements was the same as that described in an earlier article (A. I. Alikhan'yan, et al, Izv. AN Arm. SSR, Fizika, 5, 1970, p 267), modified to permit observation of the primary electron track, thus easing the procedure. The question of the possibility of separating protons and pi-mesons using this method is also investigated. The authors thank A. Ts. Amatuni for his useful comments.

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USSR

AVAKYAN, K. M., ALIKHANYAN, A. I., GARIBYAN, G. M., LORIKYAN, M. P., SHIKHLYAROV, K. K.

"Detection of Transient X-Radiation by Means of a Streamer Chamber"

Yerevan, Izvestiya Akademii Nauk Armyanskoy SSR, Fizika, Vol 5, No 4, 1970, pp 267-274

Abstract: A new method is proposed for detecting x-ray transient radiation by means of a streamer chamber with an admixture of Xe. Use of the streamer chamber provides for separate observation of the radiation as well as of the particle, and the presence of Xe provides great efficiency in the detection of photons. It is shown that the average number of transient quanta increases linearly in the electron-energy interval from 1.2 to 2.46 Gev. With the use of foam plastic instead of a layered medium, the efficiency of electron detection with respect to transient radiation equalled 86%.

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USSR

ALIKhANYAN, A. I., BELYAKOV, E. S., LORIKYAN, N. P., MARKARYAN, K. Zh, and SHIKhLYAROV, K. K.

"A Study of Transition Radiation in Plastic Foam"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 17, No 9, 5 May 73, pp 453 - 456

Abstract: Recent studies have indicated the great utility of transition radiation in those high-energy regions where traditional methods of particle identification encounter great difficulties. However, there is still a lack of systematic studies of radiation spectra in porous materials. The authors used the Yerevan electron accelerator to study radiation in the frequency band 13 - 130 kev. Electrons with energies of 1 - 3.75 Gev were used to produce photons detected by a scintillation counter with a NaI crystal 2 centimeters thick and 7 centimeters in diameter, behind a beryllium salt window 100 microns thick. Differential radiation spectra and curves relating the total number of photons per electron to the characteristics of the plastic were obtained.

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